ABSTRACT

A computer system with high-speed memory devices includes one or more temperature sensors and/or environmental sensors that monitor environmental parameters that may affect the operation of the high-speed memory devices. The sensor values are provided to control logic in a memory controller that can intelligently modify the operation of the memory devices in response to changing environmental conditions. Thus, in response to deteriorating environmental conditions, the memory controller may increase the frequency of calibration cycles. The sensors may be provided on multiple channels, if the memory system is configured with multiple channels, or may be individually associated with memory devices. In addition, the memory controller also monitors the expected remaining life of the memory devices, and the number of errors occurring in the memory devices, and based on these parameters, may change the frequency of the calibration cycles.